



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/464,315	12/16/1999	TAN DU	TI-29436	7360

23494 7590 12/13/2005

TEXAS INSTRUMENTS INCORPORATED  
P O BOX 655474, M/S 3999  
DALLAS, TX 75265

EXAMINER
----------

CRAIG, DWIN M

ART UNIT	PAPER NUMBER
----------	--------------

2123

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.



UNITED STATES PATENT AND TRADEMARK OFFICE

---

Commissioner for Patents  
United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

**MAILED**

DEC 13 2005

Technology Center 2100

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/464,315

Filing Date: December 16, 1999

Appellant(s): DU ET AL.

---

Wilson D. Swayze  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 1 September 2005 appealing from the Office action mailed 26 January 2005.

**(1) *Real Party of Interest***

The statement identifying the real party in interest contained in the brief is correct.

**(2) *Related Appeals and Interferences***

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) *Status of Claims***

The statement of the status of claims contained in the brief is correct.

**(4) *Status of Amendment After Final***

No amendment after final has been filed.

**(5) *Summary of Invention***

The summary of claimed subject matter contained in the brief is correct.

**(6) *Grounds of Rejection***

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) *Claims Appendix***

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

### **(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 2, 7, 12, 13, 18, 19, 23 and 24 are rejected under 35 USC § 102(b) as being anticipated by Pedrazzini US Patent 6,373,650.

These rejections are set forth in a prior Office Action, mailed on 1/26/2005 which is incorporated by reference in its entirety.

The detailed grounds of rejection that are of issue in this Examiner's answer are disclosed in detail in the Final Office Action mailed to the Applicant on 1/26/2005.

### **(10) Response to Argument**

Appellant argues that the cited reference US Patent 6,373,650 does not disclosed all of the expressly claimed limitations in independent claims 1, 7, 12 and 23. In particular Appellant argues; *"Pedrazzi does not disclose or suggest the presently claimed invention including a circuit to terminate the driving current and a circuit to create a magnetic field to oppose eddy currents established in structures adjacent to the coil by driving current in independent Claim 1"*.

*Pedrazzi* teaches a circuit to terminate driving current, Figure 3 item 32, *more specifically*, the disclosed teaching shows that the modeling of the disk drive motor item 32 and the attached feedback system, *items 32, 46, 55 and 80*, is the same as the disclosed modeling of the drive motor and feedback/control system in Appellants' Figure 2 items 50, 23, 46, 42 and 47. Just as Appellant's disclosed feedback circuitry as disclosed in Figure 2 teaches a method for providing feedback to control and terminate current to a disk drive motor, *Pedrazzi's* figure 3

Art Unit: 2123

disclosed an identical method for providing feedback to control and terminate current to a disk drive motor, see the interconnection of items 32, 46, 55 and 80 in Figure 3 of *Pedrazzi* in comparison to items 50, 23, 46, 42, 44 and 47 in Appellants' figure 2.

*Pedrazzi* teaches, "a circuit to create a magnetic field to oppose eddy currents established in structures adjacent to the coil by driving current". *Pedrazzi* teaches (Col. 2 lines 39-42) "The voice coil motor driving circuit is also able to compensate for changes in the voice coil motor properties with time or with temperature changes and for effects caused by motion of the disk drive." The Examiner notes that when the motor, which is constructed of current conductive metallic alloys, *is in motion*, inside the metallic alloys of the disk drive enclosure, *i.e. adjacent structures*, that it is inherent that eddy currents will be created. The inherent induced eddy current that is created is known in physics as Lenz's law, The creation of the eddy currents is created because of Lenz's law, *i.e. The emf induced in an electric circuit always acts in such a direction that the current it drives around the circuit opposes the change in magnetic flux which produces the emf.* Thus, the *Pedrazzi* reference inherently teaches that the disclosed feedback circuit is able to *compensate for effects caused by motion of the motor*, or as claimed by the Appellant, the *Pedrazzi* reference teaches generating magnetic fields to oppose eddy currents generated by adjacent structures in a disk drive assembly.

Appellant argued as regards independent claim 7 that the *Pedrazzi* reference fails to teach, "a circuit to determine BEM voltage after termination of the driving current and a circuit to generate a magnetic field to oppose eddy currents established in structures adjacent to the coil by the driving current in independent claim 7," The *Pedrazzi* reference teaches the measurement of a BEMF in the after termination for the driving current as expressly claimed in

Art Unit: 2123

independent claims 1 and 7. *Pedrazzi* (Col. 5 lines 6-16), “Also, the BEMF of the voice coil motor 32 is related to the actual motor velocity  $v_m$  is given by  $BEMF = K_e v_m$ , where  $K_e$  is a motor design constant whose value can be calculated with greater accuracy than is required for the motor velocity  $v_m$ . The second operational amplifier 57 allows the actual BEMF in the voice coil 11 (FIG. 1) to be forced to a desired value by compensating for effects due to resistance  $R_{motor}$ . As a result, the BEMF and  $K_e$  are known and thus the motor velocity  $v_m$  can be controlled more precisely during head parking or unparking than is possible without the ramping amplifier 55.” *Pedrazzi* teaches the forced, control of the motor control, wherein the BEMF is being accounted for, and the method disclosed for this *forcing* is the generation of current, which produces magnetic fields, which then compensates for the required eddy currents that are created when the motor assembly moves. It should be noted that the claim does not require direct measurement of BEMF and thus *Pedrazzi* meets the claims.

Appellants’ further argued, as regards independent claims 12, 18 and 23 that the *Pedrazzi* reference fails to teach activating selected VCM coil driver transistors to create a magnetic field to oppose eddy current established in structures adjacent to the coil by driving currents. *Pedrazzi* teaches activating VCM coil transistors to create magnetic fields to compensate for; *effects caused by the motion of the motor*, (Col. 2 lines 39-42) and VCM coil transistors that are activated Figure 3 items 82, 14 and 15 and explained in Col. 1 lines 65-67 and Col. 2 lines 1-15. The Examiner notes that operational amplifiers are composed of transistors.

Art Unit: 2123

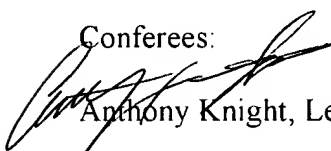
For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

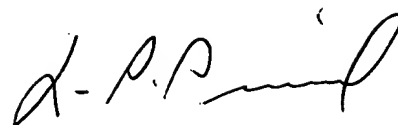
Dwin M. Craig



Conferees:



Anthony Knight, Leo P. Picard and Dwin M. Craig



**LEO PICARD**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2100**